09/22/23 • BIG CHEMICAL › VIEWS

Brain Tumors in Children Linked to All Classes of Pesticides: Review

Pesticide exposure, even at home, can cause central nervous system tumors and other cancers in children ages 0–14, according to a review of the scientific literature. Researchers said their findings show the need for policies and education to curb pesticide use and promote organic agriculture.

By Beyond Pesticides

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A literature review published in Ciência & Saúde Coletiva finds environmental exposure to all classes of pesticides (fungicides, herbicides, insecticides) has an association with childhood astrocytoma, or brain and central nervous system (CNS) tumors.

CNS tumors represent half of all malignant neoplasms (tumors) in children. Although medical advancements in disease survival are progressing, childhood cancer remains the leading cause of death from disease among children.

Furthermore, childhood cancer survivors can suffer from chronic or long-term health complications that may be life-threatening. The etiology or cause of childhood cancer involves the interaction of multiple components that include environment, lifestyle and genetics.

However, emerging evidence indicates that environmental contaminants like pesticides (e.g., occupational exposures, air pollution, solvents, diet, etc.) affect disease etiology.

Pesticide contamination is widespread in all ecosystems, and chemical compounds can accumulate in human tissues, resulting in chronic health effects. Children are particularly vulnerable to the impacts of pesticide

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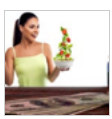
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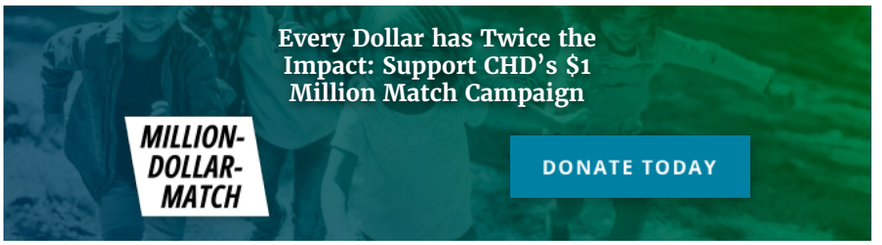
exposure, as their developing bodies cannot adequately combat exposure effects.

Moreover, several studies demonstrate an association between environmental or occupational pesticide exposure and the risk of childhood cancer.



Considering that maternal pesticide exposure can have a stronger association with cancer among children than childhood exposure, and newborns can still encounter pesticides, it is essential to understand how pesticide accumulation and co-occurrence can increase the risk of latent diseases (e.g. cancers) among vulnerable populations, such as children/infants.

In this piece, Brazilian researchers systematically review the literature in the PubMed/MEDILINE, Embase, Web of Science, Scopus and CINAHL databases to investigate the association between pesticide exposure and CNS tumors in children aged 0 to 14.

The literature review identifies 1,158 studies associated with CNS and pesticide exposure, with the paper focusing on 14 eligible studies. The results confirm evidence of CNS tumor development, specifically brain tumor development, among children exposed to all classes of pesticides. The most common exposure setting was in the home.

There is a significant scientific connection between pesticides and cancer, as several studies link pesticide use and residues to various cancers.

Both current and past-use pesticides and chemical contaminants play a role in similar disease outcomes as several chemicals have implications for specific cancer risks (e.g., breast cancer, non-Hodgkin's lymphoma, prostate cancer, etc.).

In addition to the robust links between agricultural practices and pesticide-related illnesses, over 65% of commonly used lawn pesticides and 70% of commonly used school pesticides have links to cancer.

Although general pesticide exposure can increase susceptibility to cancer, prenatal and early-life exposure to environmental toxicants can increase cancer risk. For decades, studies have demonstrated that childhood and in-utero exposure to the U.S.-banned insecticide DDT increases the risk of developing breast cancer later in life.

Moreover, a 2021 study finds previous maternal exposure to the chemical compound during pregnancy increases the risk of breast cancer and cardiometabolic disorders (e.g., heart disease, obesity, diabetes) up to three successive generations.

This study highlights that any pesticide type can lead to CNS tumor development. Most notably, exposure to pesticides in the home represents the most typical type of exposure setting. This is concerning as most of one's lifetime is spent in the home.

This study is not the first to find a risk between childhood cancer development and household pesticide exposure. Pregnant mothers' exposure to household cleaners, many of which are pesticides, can increase nephroblastoma (kidney cancer) and brain tumor risk in children.

Therefore, it is essential to understand how external stimuli — like environmentally relevant pesticide exposure — can drive cancer development to avoid exposure and lessen potential cancer risks.

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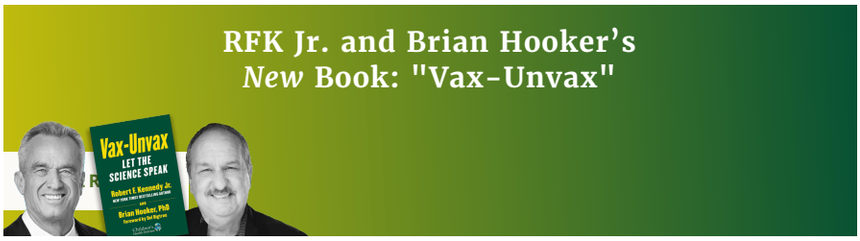

The study concludes:

> "The investigation of factors related to the risks of using pesticides is vital to inform environmental policy and curb the indiscriminate use of these substances in agriculture.
>
> "A package of measures are therefore required, including public policies, effective environmental protection, and educational initiatives in primary health care services.
>
> "The latter should address the residential use of potentially harmful chemicals, encourage healthy eating based on the consumption of organic foods, promote the use of personal protective equipment by parents employed in agriculture, and provide guidance to avoid the use of pesticides in the home before and during pregnancy."

Globally, cancer is one of the leading causes of death, with over eight million people succumbing to the disease every year.

Notably, the International Agency for Cancer Research predicts a 67.4% rise in new cancer cases by 2030. Thus, it is critical that both government officials and the public understand the health implications of pesticide use and exposure to humans, especially when pesticides increase chronic disease risk.

Beyond Pesticides tracks the most recent news and studies on pesticides through the Daily News Blog and Pesticide-Induced Diseases Database (PIDD). This database supports the need for strategic action to shift away from pesticide dependency.

For more information on the adverse effects of pesticides on human health, see PIDD pages on cancer (lymphoma, multiple myeloma), birth/fetal defects and other diseases.

Additionally, since pesticides can have multi-generation impacts on our health, you can learn more about the hazards posed to children's health through Beyond Pesticide's Pesticide and You Journal article, "Children and Pesticides Don't Mix."

There is a strong consensus among pediatricians that pregnant mothers and young children should avoid pesticide exposure during critical windows of development.

However, the general population should follow this advice as the effects of pesticide exposure span every individual.

Fortunately, the wide availability of non-pesticidal alternative strategies allows families and agricultural industry workers to apply these methods to promote a safe and healthy environment, especially among chemically vulnerable individuals.

For instance, buying, growing and supporting organic land management can reduce human and environmental contamination from pesticides.

Organic agriculture has many health and environmental benefits, which curtail the need for chemical-intensive agricultural practices.

Numerous studies find that pesticide metabolite levels in urine significantly decrease when switching to an all-organic diet.

For more information on how organic is the right choice for both consumers and the farmworkers who grow our food, see the Beyond Pesticides webpage on "Health Benefits of Organic Agriculture."

Originally published by Beyond Pesticides.

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the views of Children's Health Defense.

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Beyond Pesticides

Beyond Pesticides is a nonprofit organization headquartered in Washington, D.C., which works with allies in protecting public health and the environment to lead the transition to a world free of toxic pesticides.

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Raeann Peck
6 days ago
Why are we not discussing childhood brain cancer and it's relationship to vaccines from day one of birth?
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PonyBoy ↗ Raeann Peck
5 days ago
Why indeed.
0 0 Reply • Share ›

Beckie
6 days ago
Can't ignore rampant cell phone use in kids as contributing to all the brain cancer either.
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Olga
5 days ago
In the UK still every soft furniture you buy is treated with fire retardants TDCCP Health concerns.
Long-term exposure to these chemicals are likely to develop cancer or skin disease for fire fighters, and the potential contamination towards the environment will be another safety concern. Many of these chemicals are now recognized as global contaminants and are associated with adverse health effects in animals and humans, including endocrine and thyroid disruption, immunotoxicity, reproductive toxicity, cancer, and adverse effects on fetal and child development and neurologic function.
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Dean Jackson
4 days ago edited

Pesticides? Now The Defender is attacking our food supply with bogus studies paid for by the Marxist establishment, but ignores the real genocide of masking children, children requiring more oxygen than adults, by body mass...

"CHILDREN ARE NOT LITTLE ADULTS

Children's Health and the Environment
WHO Training Package for the Health Sector
World Health Organization

Children have a dynamic physiology that is not only turned up to “high” because of growth demands, but also vulnerable to damage during differentiation and maturation of organs and systems.

Their needs for energy, water and oxygen are higher, because they go through an intense anabolic
process.

...

see more

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John Stone Mod → Dean Jackson
4 days ago

Thank you Dean, but of course we are not ignoring anything and we should not ignore poisons in the food supply, and I don’t think it is right to align concern about it with globalist threats to the food supply - you may be aware of Mr Kennedy’s epic litigation against Monsanto.

2 0 Reply • Share ›

Dean Jackson → John Stone
4 days ago edited

For two years now I've alerted Defender readers to the genocide taking place with masking for children, yet to date The Defender is silent on this horrific policy. Masking is bad enough for adults who are fully grown, but for children they are deadly. Where is RFK Jr.?

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John Stone Mod → Dean Jackson
4 days ago

https://childrenshealthdefe...

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Dean Jackson → John Stone
4 days ago

Nowhere is covered the deadly effects of children and masks.

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jann → Dean Jackson
6 hours ago

Dean, I suggest you look back at why CHD was formed.

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Dean Jackson → jann
an hour ago

"Dean, I suggest you look back at why CHD was formed."

It's right there in the title...Children's Health Defense - so why would I need to look it up? Now, why does CHD conspire with the rest of the Satanist establishment to keep its silence to the murder of children via masking?

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John Stone Mod → Dean Jackson
an hour ago

Dean

I don’t understand how we have wandered from the topic of pesticides to masks which CHD has consistently opposed on many fronts, and yet you repeat extreme and unwarranted claims (as I have documented). I think you should back down.

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Children's Health Defense® is a 501(c)(3) non-profit organization. Our mission is to end childhood health epidemics by working aggressively to eliminate harmful exposures, hold those responsible accountable and establish safeguards to prevent future harm. We fight corruption, mass surveillance and censorship that put profits before people as well as advocate for worldwide rights to health freedom and bodily autonomy.

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